

<b>Notice of Allowability</b>	<b>Applicati n N .</b>	<b>Applicant(s)</b>	
	10/605,627	BOUCHER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	John P Fitzgerald	2856	

**-- The MAILING DATE f this communicati n appears on the c ver sheet with th c rrespondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_\_.
2. ☒ The allowed claim(s) is/are 1-49.
3. ☒ The drawings filed on 15 October 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) f each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>10/15/03</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                               | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

## **DETAILED ACTION**

### **EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Jeffery Daly on 25 June 2004.

The application has been amended as follows:

In claim 15, line 2, "said cavity" has been deleted and - -each of said cavities- - has been inserted before "define"

In claim 16, line 1, "said cavity defines" has been deleted and - -each of said cavities define- - has been inserted before "a space"

In claim 17, line 1, "said cavity has" has been deleted and - -each of said cavities have- - has been inserted before "a circular"

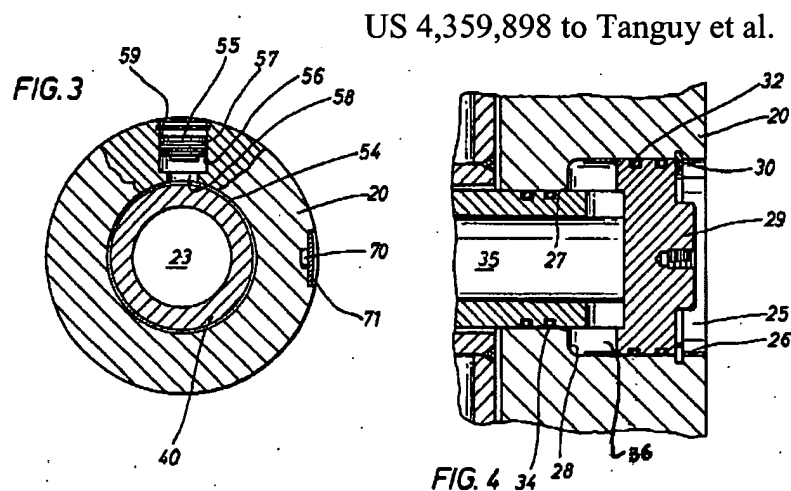
In claim 19, line 1, "said cavity has" has been deleted and - -each of said cavities have- - has been inserted before "a circular"

In claim 20, line 1, "said cavity is" has been deleted and - -each of said cavities are- - has been inserted before "formed"

In claim 21, line 1, "said cavity is" has been deleted and - -each of said cavities are- - has been inserted before "defined"

***Allowable Subject Matter***

2. Claims 1-49 are allowed over the Prior Art of record.
3. The following is an examiner's statement of reasons for allowance: As to claims 1, 12, 24 and 37, the primary reasons for allowance of the claims is the inclusion of the elements and method steps of a weight-on-bit or downhole measurement tool having a cavity wherein a strain gage is mounted to a mounting surface, the strain gage being positioned or located in a region of approximately zero axial strain due to downhole pressures during drilling operations, or the determination of the region of approximately zero axial strains due to downhole pressures during drilling operations and the subsequent placement of a strain gage at that location. The closest reasonable Prior Art reference is US 4,359,898 to Tanguy et al. (see Figs. 3 and 4 below) which teaches a weight-on-bit assembly the placement of strain gages (62-65) at locations on the body (40) where they will indicate the amplified stress (thus related strain) without responding to thermal strain, in particular, mounting the strain gages at or near the radius where the thermal stress is zero, which is near the center of a wall-section thickness in a tubular body, thus unaffected by temperature gradients (Tanguy et al.: col. 2, lines 20-26 and col. 5, lines 27-31).



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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### *Conclusion*

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Obrecht, Wachtler et al., Das, Hebel, Maron and Gabler et al. all teach various placements of strain gages within cavities on downhole tools to measure the weight-on-bit or torque-on-bit to properly measure axial and other strains associated with the pressures induced in downhole environs.
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Fitzgerald whose telephone number is (571) 272-2843. The examiner can normally be reached on Monday-Friday from 7:00 AM to 3:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams, can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

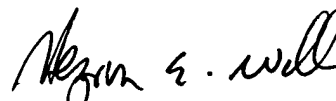
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have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JF

06/25/2004



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